Electricity on the Farm

A Monthly Magazine for the Up-to-Date Rural Family

MARCH, 1933

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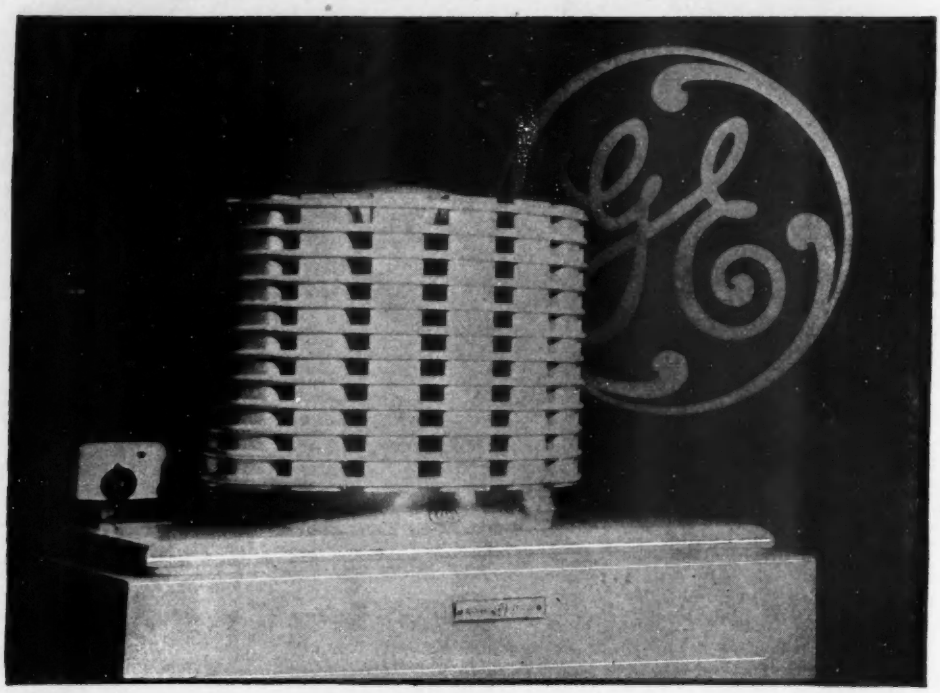

No Refrigerator Has Matched the Monitor Top Mechanism for Dependable Trouble-free Service

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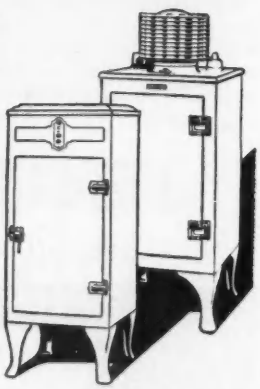

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GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

March, 1933

Electricity on the Farm

Vol. 6. No. 3

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Profit in Cream Cooling

BY C. J. HURD

To produce a quality product at a profit was the aim of S. H. Robison, a farmer of Rickreall, Oregon. The author on page 6 tells how electric refrigeration helped Mr. Robison secure a premium for his cream.

They Milk the Cow in the Parlor

BY B. YOEPP

Forge Hill Farm is a modern, as well as a model, dairy farm. Mr. Yoepp in his article on page 7 describes the manner in which electricity has helped its owner accomplish highly satisfactory results.

Sixty Electric Hover Brooders

BY F. M. WIGSTEN

In this article on page 9 the author gives data and outlines the results obtained from the use of electric hover brooders by poultrymen in the Central Hudson Valley of New York.

55% More Work with a Stationary Spray Plant

BY HARRY L. GARVER

Orchardists everywhere are interested in improving their fruit crops. This article by Mr. Garver on page 11 gives in descriptive form the data gathered by his study of stationary spray plants at Wenatchee, Washington.

Giving the Plants an Early Start

BY J. C. SCOTT

Electricity is being used on an increasing scale for soil heating. The author on page 13 tells how Mr. M. A. McTarty of Riderwood, Washington, produces strong, healthy vegetables and tree plants in heated beds. It enables him to get his tree seeds germinated in February, thus producing stronger plants.

A Soil Sterilizer

BY A. V. KREWATCH

A new method of soil sterilization is described on page 16 by Mr. Krewatch. The author also outlines the construction of a soil sterilizer.

Regular Monthly Features

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EDITORIAL

THE attention given to widely increasing substitution of machinery for man power in factories, through the discussion of technocracy during the past few months, has served to emphasize the vast difference between agriculture and other industries.

While machinery has sped up farming, it has done so more as a result of replacing horsepower than manpower. Outside of harvesting operations, where the combine has displaced many men, the average farm today requires just as many farm hands as it did ten years ago.

Though it has been possible in factories to cut production costs through mechanizing operations, farm production costs in most cases have remained practically stationary over a period of several years. Until methods and equipment are developed to simplify and expedite field operations, there is little chance of accomplishing any great savings in labor in this branch of farming.

Around the farm workshop, the dairy, the poultry houses and the household, the story is a different one. Power is rapidly coming to the assistance of the farm family. While in many instances there is no hired help to eliminate, it does shorten chores and otherwise make the farm home an attractive place to live.

To electricity probably belongs the greatest credit for modernizing farm life. What it has done up to date is but a shadow of what may be expected in the future. The farm of tomorrow will use machine power on an ever increasing scale; manpower will diminish; horsepower, likewise. And, it is hoped, farming will show profits proportional to those from other large industries.

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Mr. Robison placing the cream in his refrigerator

PROFIT IN CREAM COOLING

By C. J. HURD

IS there profit in producing quality cream in Oregon? Ask S. H. Robison, of Rickreall, Oregon.

Mr. Robison has a wonderful herd of twenty-five pure bred Jerseys. He takes an immense pride in his herd and he naturally wants the product from these cows to be the best that it is possible to produce. At the same time, Mr. Robison is a business man and he wants his herd to show the greatest possible return. This story tells how Mr. Robison produces a quality product at a profit.

Over fifty per cent of the creameries in Oregon recognize the fact that sweet cream is worth more to them than sour cream. A higher score butter can be made and a more uniform product with less chance for off flavors to be present in the butter when sweet cream is used. Therefore creameries pay from two cents to five cents premium per pound butterfat for sweet cream with a few creameries paying higher.

Refrigeration Solves the Problem

Mr. Robison knew this but he also knew he couldn't sell sweet cream the year round unless he delivered every day. His nearest market is eight miles, and it would not be good business to take the time to deliver every day. His State College told him if he put in a mechanical refrigerator he could ship twice a week and still maintain a quality product. This sounded good, but the next question was, would it pay? He found that if he shipped to Corvallis, a distance of 30 miles, he could get five cents per pound over market price quotation. Mr. Robison decided to put in mechanical refrigeration.

This all happened a little over a year ago. Let us see what was the result.

The procedure in handling the cream was to place the cream immediately in the refrigerator after separation. The refrigerator used is of the immersion type, the cans of cream being cooled in the refrigerated water. The temperature of the water varies between 38° F. to 42° F. Twice a week all the cream was shipped, by express to Corvallis in 10-gallon milk cans with no insulation jackets. Mr. Robison had to go only about one mile to the station twice a week.

Secures Premium for Cream

The cream from his farm from the time he installed the refrigerator June, 1930, to August, 1931, graded No. 1 sweet cream, and as such he was paid the five cent premium. The butterfat content averaged 32.7%.

From June 14, 1930, to August 10, 1931, 8740 pounds of butterfat were received from Mr. Robison's dairy. 859 K.W.H. were used by the refrigerator. Mr. Robison uses sufficient electricity in his home and on the dairy to earn a low electric rate. His operating expense for this period of fourteen months amounted to $25.77.

The premium for this period amounted to $437.00. This leaves $411.23 which will pay the interest on his investment, the depreciation on the equipment, and leave him a nice profit. This does not include the convenience of handling his product and the pride of producing real quality cream.

Yes, Mr. Robison believes in mechanical refrigeration of cream.

Down to the creek for a drink — Jerseys on Mr. Robison's farm

THEY MILK THE COW IN THE PARLOR

By B. YOEPP

Cleanliness is the commonplace on this dairy farm, made possible chiefly through the widespread use of electric light and power.

AT New Windsor, Orange County, New York, a spot of beauty and quiet, just the place where you would expect to find one of the finest dairy herds in the country, a new method of producing milk is being successfully and profitably used. At Forge Hill Farm, owned by Mr. John L. Wilkie, one of the most revolutionary and perhaps most significant developments in clean milk production is being introduced. This system reverses the age-old procedure of the milker going to the cow by bringing the cow to the milker, thus applying the well-known industrial principle of bringing the work to the worker. Cows on this farm are not milked in the barn, but are brought into a specially prepared, sanitary milking room, or "parlor" where hospital conditions of cleanliness can be maintained.

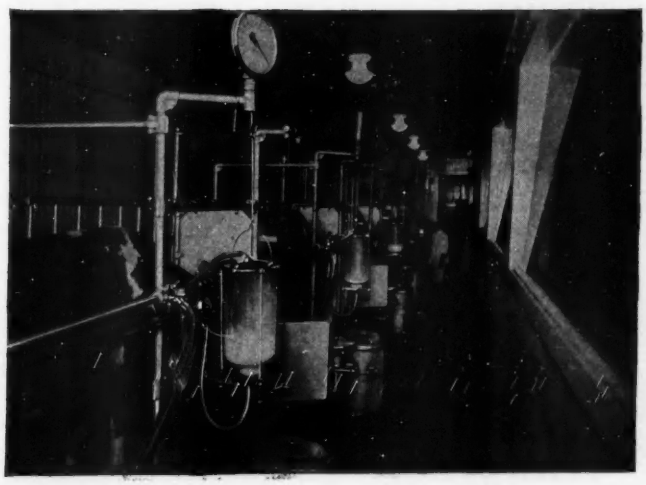
How the Forge Hill System Works

The "milking parlor" at Forge Hill consists of a separate room in which five stalls are arranged in tandem, as shown in the accompanying illustration. Immediately outside of this room are two specially constructed washing stalls through which the cows must pass to be washed on the way from the barn proper to the "milking parlor."

The stalls in the "milking parlor" are arranged with two gates on one side so that after a cow is milked, the front half of the stall side swings out to allow the cow to pass back into the barn or into an exercise yard. The rear half gate of the stall can then be opened to admit another cow. By this arrangement, cows are easily guided to their proper place either in the milking stall or to the runway leading back into the main barn.

In these five stalls, 40 cows can be milked in an hour, and it is of importance that no reduction in the individual production of each cow has been experienced, nor is stripping required after the cow has left the milking machine. At Forge Hill the milking is done three times a day, at 5 A. M., 1 P. M., and 8 P. M. The weight of the milk produced by each cow is recorded and the milk is then conveyed through sanitary vacuum pipes without exposure to the air into the bottling room. Here it passes over an enclosed cooler, cooled to less than 40 degrees within a few seconds after leaving the cow and is immediately bottled or put into cans as the trade requires. While this rapid cooling keeps some of the cream from rising, it has a definite advantage because the cream which remains in the body of the milk gives it better color and is an added selling point.

All men connected in any way with the milking process or the handling of the cows are under



Forge Hill Farm milking parlor (note plate glass observation room on right)

medical supervision at all times. Provision is also made for washing and sterilizing the milking cups after each cow has been milked.

Public May Watch Milking

The system at Forge Hill allows the customer to see exactly how milk is handled from cow to bottle. For the benefit of visitors, there is a special observation room adjoining the milking parlor. Here one can view through plate-glass windows the entire process—cows in the barn going to the wash-room, being washed, entering the milking parlor, being milked, the milk being drawn under vacuum from the cow to the glass containers, and then passing through the cooling and blending tank to the bottling machines. The farm is open to visitors at all times, but the largest number come during the milking hours.

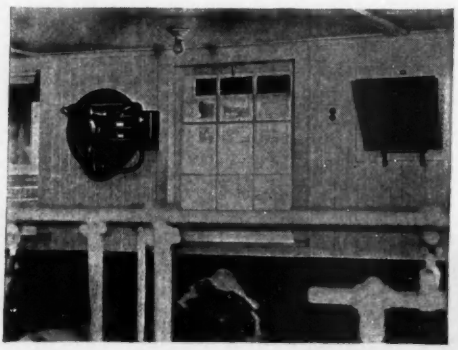
"Many of these visitors first came out of curiosity," says Mr. Charles A. Slater, a Syracuse University graduate, who is manager at Forge Hill. "But when they saw how clean and sanitary it is possible to make and keep a dairy with the aid of electrical equipment, they immediately became interested in Forge Hill milk. Our sales of bottled milk have increased over 40 per cent since the installation of our new system. We have also had requests to start delivery in two additional communities."

Part Electricity Plays

Fresh water in abundance is furnished to the dairy herd from a 175 ft. well by a 3 H. P. motor connected to a water pump. The entire milking process requires a 1½ H. P. motor. The milk is kept cool until shipment in an 800 quart cooler by the power of another 1½ H. P. motor.

Washing the cows before milking is an important part of the milking program, an abundant supply of water being made available through the use of the electric pump

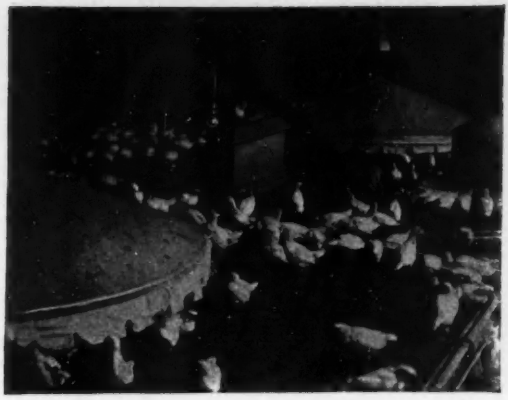
Proper ventilation, especially in the winter time, is as essential to the health of cattle as it is to human beings. Two 18" ventilating fans, thermostatically controlled, are located at each end of the Forge Hill barn, and furnish a constant supply of fresh air; 12" ventilating fans are also located in bottling room, milking parlor and sterilizing room. One of the large single reservoirs of labor at the Forge Hill Farm is a 5 H. P. portable motor which is called upon to hoist hay, grind feed, cut ensilage, and saw wood. The safety and convenience of modern electric barn lighting is, of course, an invaluable aid especially at the early morning and the evening milking.



Ventilation of the dairy barn is one of the features which make this farm a modern one. Two 18-inch ventilating fans, thermostatically controlled, furnish a constant supply of fresh air.

The bottling and milk cooling room at Forge Hill Farm. The milk cooler is shown in the background with cover removed to show detail. Cover is always on cooler when operating.

In 1732, 1,038 chicks were started under two electric brooders. 93.3% of this number were raised. The average mortality figure for New York State is approximately 25%



Two Years with Sixty Electric Hover Brooders

By F. M. WIGSTEN

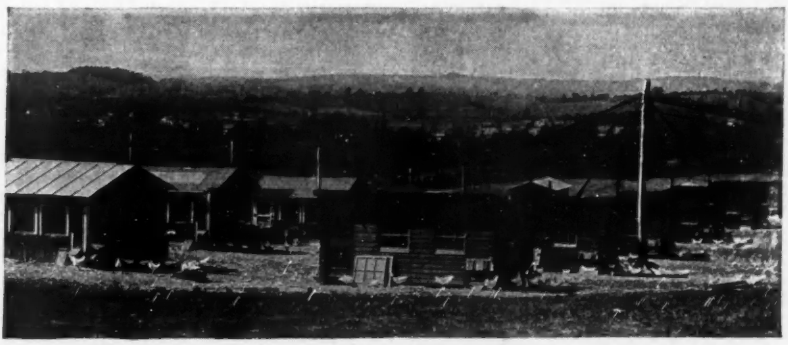
IN the winter of 1931, poultrymen living in the Central Hudson Valley of New York State agreed to keep careful records of the results they were obtaining from their electric hover brooders. They agreed to report the dates they started and finished brooding, the number of chicks placed under the electric machines, the number that died, and the cause of their losses. The electric company providing the current for heating the machines installed meters to record the energy consumed by 16 of them and from these actual readings the current used by the others was estimated.

The work was carried on by all parties as agreed and the following chart shows clearly the results obtained:

Number of flocks brooded	61
Number of day old chicks started	19,544
Number of chicks lost (all causes) during brooding period	1,721
Number of chicks raised	17,823
Average mortality (per cent)	8.8%
Total K. W. H.'s used	8,874
K. W. H. per chick	0.5

Since the study of the operation of these machines was done by co-operative agreement between the poultrymen and the power company, at the end of the brooding season an experienced poultryman was interested in interviewing each one of the users. Here are some of the interesting things the users reported to him.

The weather conditions varied a great deal during the brooding season. The first lots of chicks



Thirteen electric brooders reared five thousand chicks on this poultry farm near Poughkeepsie, New York.

were started in February. Temperatures reached as low as 8 deg. while in May the maximum reached 80 deg. Considerable snow and rain fell in March and April, which added to the brooding difficulties. On the whole, one would say, that the brooding season was typical.

The problem of moisture in the house and under the hover was discussed with each user. Approximately one-third of the operators had some remarks to make on this point. A few complained of excessive moisture. This was expected because the conditions in most oil or coal heated houses are extremely dry so that the contrast was noticeable. In no case did the user attribute losses to dampness or colds and the feeling was general that proper house and hover ventilation will keep down moisture under the electric hover.

Housing conditions varied a great deal. All types of houses were found in use and in nearly all uniformly good results were obtained. Well built, insulated houses with openings in front for ventilation proved the most satisfactory.

Current consumption varied depending on a number of factors. Well built insulated houses were the most economical. In no case was an attempt made to heat the brooding room except

Two electric machines are making fine records on this farm

under the hover and in no case was any other source of heat provided, except, of course, the sunshine through the open windows or the window glass.

In a few cases early in the season the chicks did not readily come out to eat the first day or two. Placing the food and water near the edge of the hover encouraged them to venture out, however, and at the end of the first week any spot in the room was acceptable to them as their dining quarters. Users considered it a good policy to keep some sort of enclosure within two feet of the hover for the first week to keep chicks from straying away and becoming chilled.

In general all the users agreed to the following advantages for the electric machine—easier to operate, requires less labor, no coal or ashes to handle, requires less attention at night, chicks feather more rapidly with smoother, tighter feathers, fire hazard is removed, more even temperatures can be obtained, houses can be kept cooler in warm weather, fuel costs in line with coal and oil.

The low mortality reports which nearly everyone of the 1931 users turned in and the relatively low cost for energy per chick brooded gave all concerned plenty of encouragement to repeat the study during the 1932 brooding season. This was done and, proving the 1931 record no phenomenon, the 1932 records tend to bear out the fact that a properly constructed electric hover in the hands of a good poultryman who operates it as an electric machine is designed to operate, will produce results comparable to any other method.

The 1932 study revealed:

Number of flocks brooded	63
Number of chicks started	27,904
Number of chicks lost (all causes)	1,986
Number of chicks raised	25,918
Average mortality (per cent)	7.1
Total K. W. H.'s used	10,309

How Mother Was Surprised

Below is reproduced a prize essay, written by Glenn Ewing, a thirteen-year-old student of the Harmony School, at Olathe, Kansas. Quite a pleasant surprise to Mother, we would say.—Editor.

It was a big afternoon at Harmony, the afternoon that Mr. Moore, Mr. Howe, Mr. Sawyer, Mrs. Strong, the demonstrator, came out to demonstrate "some uses of electricity in the home." The uses of the stove were demonstrated by Mrs. Strong. She made delicious cake with cocoanut icing made in the electric mixer. She also cooked brussel sprouts on the stove in a pyrex dish. These, including coffee cooked in an electric dripolator were served to the audience.

I immediately went home and talked it over with Dad. We decided to send Mother to the city for a visit while we had the house and barn wired. We thought that would be a good investment on the farm. Then, on the following Saturday morning we sent Mother to the city. While she was gone we had the house wired and then we decided to buy a few things for the house.

We soon traded the coal range in on a green enameled Electric Hot Point Automatic Range. It worked just wonderful. We then bought an Electric American Beauty Automatic Iron. Our next purchase was an A-B-C Electric Washer. We then bought an electric mixer which has saved lots of elbow strength. Then it was time to get an electric radio, of which the whole family got lots of good out of. It was a seven-tube set.

Then, I thought I would like to get Father something so I got him a milking machine. He was very pleased with it.

And now after six months, Mother looks six years younger. She is done with the work in the forenoon and ready to listen to the radio or go to club or town. Dad and I are through with the chores early and come in to listen to the radio in the evenings.

One on the Prof

Have you heard about the absent minded professor who drove home to his garage late one night? On opening the garage doors and not seeing his car, he jumped back into his automobile, drove madly to the police station and reported that his car had been stolen.

This Month's Special

The manager of a restaurant was much embarrassed to see a stranger at one of his tables wearing a napkin in the old-fashioned way—tucked under his chin.

It would never do to have such a thing as this, but on the other hand it was a ticklish problem to decide how the napkin could be removed.

Calling a waitress he asked her to suggest the removal as tactfully as possible. Five minutes later he almost fainted when the young lady posed in front of his customer and said seriously: "Shave or hair cut, sir?"

Electric driven spray plant. Outfit will be completely housed with a platform built at rear on a level with the top of the tank. This will permit emptying barrels without lifting.

55% more work with a STATIONARY SPRAY PLANT

By HARRY L. GARVER

THE name stationary spray plant as used in this article is intended to cover all of those spray systems having pumping plants which are permanently located some place in the orchard and which supply spray material at the desired locations through pipes and hose lines. The stationary spray plant is referred to as the faucet system in some parts of the country.

As long ago as 1910 or 1911 a man by the name of A. J. Dear then living on a small orchard tract near Wenatchee, Washington, conceived the idea that if pipes were laid out through the orchard from his portable spray outfit considerably less damage would be done to the irrigation ditches and to the low hanging branches of the young fruit trees. He tried out the plan and found that it worked satisfactorily. The idea, although written up in a local daily paper, did not become popular until in 1921 when another orchardist by the name of William Moss decided to install a plant on a permanent foundation. This plant was watched critically by both sympathetic and skeptical neighbors and spray plant manufacturers.

The outfit worked well and by 1926 nearly a thousand of these plants were in operation in the Wenatchee orchard district. It was these plants that the writer went to Wenatchee to study and describe so that other orchardists might build similar plants without having to make personal trips for the purpose of learning how to install a stationary spray plant and piping system.

A piping system suspended from branches in the trees, being supported by means of straps or brackets so that they do not chafe the limbs.

Operation Differs Slightly

The principles of operation of the stationary spray plant and that of the portable outfit differ only in one respect. In one the pumping plant is hauled to the trees and the spray material applied by means of a gun or rod attached to the end of a comparatively short hose. In the other the plant occupies a fixed position in some part of the orchard and the spray material is delivered to the spray gun through a very long hose if the pipe and hose may both be thought of as a unit. The actual length of hose carried by the sprayman need be no longer than that carried by the man with the portable outfit. In fact many orchardists seem to think that the faucets should be so located that hose lines of not over 100 feet and not less than 80 feet be used. With hose of this length they feel that more and better spraying can be done since the sprayman is less fatigued in the after part of the day than he is when a longer hose is used. The use of a shorter hose requires too many faucets and too much piping.

Sturdy Construction Made Possible

The pump, while exactly the same in principle as that used on the portable outfit, may be built much more rugged. The weight is no factor since it is not drawn through the orchard. It is usually mounted on a permanent concrete base which prevents excessive vibration and thus adds greatly to the life of the plant. The fact that the pump is permanently located necessarily means that the tank must be of the stationary type and may be much heavier and larger. Many of these tanks

Concrete tank with sheet iron settling tank mounted on top. The outlet from the settling tank to the agitator tank is located several inches above the bottom, and is large enough to fill the agitator tank in four or five minutes. The small box on top contains a screen which catches large floating objects.

are built of concrete or steel. They are usually built large enough so that an entire 50 gallon barrel of lime-sulfur solution may be used in each tank full.

By building the pump heavier and stronger it has been possible to increase the pressure to a much higher value and thus not only overcome pipe friction but to deliver the spray material to the desired point with sufficient pressure to reach the tops of 40 foot trees from the ground with a well constructed gun. The pressure varies from 375 lbs. to 500 lbs. per square inch among different orchardists. It will vary also depending upon the location of the plant within the orchard. If the plant is located at the lowest point in the orchard the pressure should be nearly one-half pound greater for each foot that the spray mixture must be elevated above the pump than is necessary in a level orchard and one-half pound less if located at the highest point.

Distribution and Care of Pipe Line

Three methods of laying the pipe are employed, namely: suspended in the trees, placed on the surface of the ground, and buried. Many orchardists prefer to place the pipe on the ground for the first year at least until they satisfy themselves as to the best location for the faucets. A few growers take the pipe lines apart each year and store them. This practice has both advantages and disadvantages. It affords an opportunity for a thorough inspection and draining in case the lines are not properly drained after the last spraying. It also permits of a thorough cultivation of the orchard and allows wagons or sleds to go through in any direction without fear of injury to the system. It has the disadvantage of wearing the thread and weakening the joints. The pipe is likely to be injured by the wrenches. Considerable labor is involved in taking it up and replacing it.

The piping may be classified under two heads, the "dead-end," and the "return" systems. In the dead-end system a main pipe line is laid either along one side of the orchard or through the center and laterals extending from it on either side, or both. Less pipe is required for this system but more care must be exercised in laying so that it will drain properly. If the plant is located at the lowest point in the orchard the system may be drained back to the tank and the material not wasted as is the case when the pipes are drained at the distant ends. In this system the relief valve opens through a short pipe directly into the agitator tank.

The return system may be laid out in much the same manner as the dead-end except that the ends of laterals empty into return pipes which drain into the tank through the relief valve. It is probable that the spray mixture is kept in a greater state of agitation in this than in the dead-end system, but more power is required to force the overflow through the longer pipes. Wenatchee orchardists are not agreed that the extra expense for the return pipes is justifiable in view of the advantages thus gained.

Economic studies made on these plants revealed the fact that there is practically no difference between the cost of the stationary plant for a given orchard than for portable rigs for the same orchard. There does seem to be considerable saving in time with the stationary outfit. The studies showed that the ratio of spraying done with the stationary plant as compared with that of the portable plant was approximately 14 to 9.

The stationary spray plant possesses other advantages over the portable. The low hanging branches are not molested as they frequently are when the plant is drawn through the orchard. Irrigation ditches are not destroyed. Spraying may be done when the soil is too wet and soft to permit taking the portable outfit into the orchard. Each sprayman may take his own gait and thus do better work. The stationary plant may be operated with an electric motor.

Advantages of Electric Motor

The electric motor for driving the spray plant has many advantages over other methods. It is convenient to start and to stop; it operates at constant speed; there is no racing when the guns are all closed as is the case with most tractor or automobile engine driven plants. No attendant is required which is a large economic factor.

It is not customary for orchardists in Washington to mix their lime-sulfur and lead-arsenate solutions, but it has been noted in some sections of the country that when these solutions are mixed there is a tendency for a chemical reaction to take place forming lead-sulfide, a black precipitate, and other sulfur compounds, and allowing free arsenic to be sprayed onto the foliage. This problem has not been met in this State to the writer's knowledge but should be investigated where the mixing of these solutions is practiced to make sure that the arsenic is insufficient to cause injury to the foliage and that the lead-sulfide will not harden and clog the pipes.

Handicapped

Girl (to one-armed driver): "For goodness' sake, use two hands."
Driver: "Can't. Gotta drive with one."

Bargain Day

Angus: "You know the difference between the taxi and the bus?"
She: "No."
Angus: "Fine; we'll just take the bus."

He Was Frank, at Least

Young Lady: "How soon will I know anything, Doctor, after I come out of the anesthetic?"
Physician: "Well, that's expecting a great deal from an anesthetic."

Giving the Plants AN EARLY START

By J. C. SCOTT

THAT it is entirely possible and practical to grow plenty of garden stuff for an ordinary family on a plot 4′ by 24′, is indicated by the experience of M. A. McTarty, foreman of the Longbell Nursery at Riderwood, Washington. The Longbell Lumber Co. is trying the use of electricity for heating the soil to hasten the propagation of trees used in replanting their vast stretches of logged off territory.

The beds or plots used in these preliminary trials are enclosed by one by six-inch pieces of lumber, nailed together and placed on top of the ground. Over these frames is placed burlap on cold nights during the early part of the season.

Two of the beds used are 4′ by 24′ and the other two were 4′ by 12′. In these the soil was warmed by placing a resistance wire 12″ to 14″ under the ground. The wire is zigzagged back and forth across the bed about every 10″. The resistance wire used is No. 4 lead wire, not insulated. It is placed in sand, well packed around it. It is important to have no air pockets about the wire, as it will burn out in these places.

The current was turned on only when heat was needed, which is usually during the night only, although it is necessary to leave the current on for about 60 hours before planting. The temperature of the soil was about 70 degrees when the weather ranged about 50 degrees F.

"Electric heating of the soil certainly pushes the garden along in the spring," says Mr. McTarty, who operated the hotbeds. "I planted cabbage and cauliflower seed and in nine days the plants had germinated and grown to one foot in height. Garden stuff can be started much earlier in the spring and a tremendous crop grown in a very small plot. Although tomatoes were only an incidental crop, we sold enough tomato plants to pay for fussing with the electric hot bed. We also raised radishes, rutabagas, onions, as well as pretty nearly everything you can think of in the way of garden stuff.

"With the hot bed, anyone can germinate seed in February in this climate.

"We are going to put in more hot beds for germinating trees because we can get the tree seeds germinated in February, which gives a very much better growth and stronger plants."

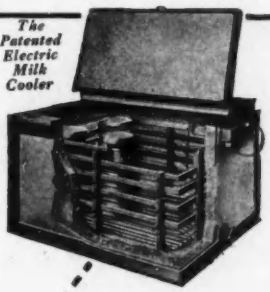
Strong plants developed in less time where electric soil heat is used.

ESCO

Reg. U. S. Pat. Off.

"does a better job than ice and at about one-half the cost" *says Chas. Sennitt, Illinois Dairyman*

The Patented Electric Milk Cooler

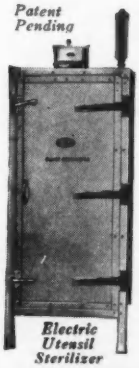


Stop all that drudgery of moving, washing and crushing ice. Make more money by installing an ESCO Electric Milk Cooler, cooling your milk quickly and *keeping it below* 50 *degrees until shipped.*

Guard your market, keep your customers pleased, and like Mr. Sennitt and thousands of other dairymen all over the country, you will say "there is absolutely no comparison with the old way."

With an ESCO you merely plunge your cans of milk into the cold water, and take them out at shipping time. Its action is automatic, rapid, unfailing. Send for full details.

Patent Pending



Electric Utensil Sterilizer

Sterilize Your Utensils Electrically

Bacteria counts go down and profits go up when you sterilize and dry utensils in an Esco Electric Dairy Utensil Sterilizer. Automatic. Saves time, labor, money. Avoids dirt, smoke and fire hazard.

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I make.....cans of milk daily. Send full details in regard to:

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( ) ESCO Elec. Utensil Sterilizers
( ) ESCO Elec. Dairy Water Heaters

Name .....

Address .....

P. O. .....State .....

ON THE AIR

Conducted by Jerome J. Henry

Farm Forum Back on Air

OPINIONS of agricultural and business leaders may often prove valuable to farmers. It is to present these views on controversial agricultural subjects that the NBC Farm Forum is planned. Broadcast every Saturday afternoon at 1:30 p. m., Eastern time, the Farm Forum program features outstanding authorities on timely subjects.

Various viewpoints on major issues are brought out from time to time for the particular interest of farm radio listeners. The program was resumed recently after going off the air last fall because of conflicts with broadcasts of important football games.

• • •

New Radio "Echo Chamber" Controls Voices

THROUGH the development of the Echo Room, a device for adding resonance to the voice after it has entered the microphone and before it goes on the air, radio engineers have overcome one of the biggest technical problems in connection with broadcasting the human voice.

With the aid of the Echo Room, it is now possible to present from a "dead" studio, a dramatic scene taking place in a tunnel, basement or other location where the voice has a decided reverberation, and reproduce on the air the proper "hollow" sound, thus adding to the realism of radio dramatic programs.

This reverberation is produced in a bare, soundproof chamber, about 12 feet square, equipped with a loudspeaker and microphone. The speaker is connected with the studio in which the program originates and the "echo" microphone leads back to the panel in the original studio's control booth. Just enough of the reverberation is mixed in by the control engineer to give the proper background.

While a large "dead" studio gives a voice approximatelv the quality it would possess in the open outdoors, "hollow" voices have been previously impossible on the air because any studio sufficiently "live" to give the necessary resonance would have too much reverberation to reproduce programs clearly on the air.

• • •

Singin' Sam Hockey Star

SINGIN' SAM, CBS singer and entertainer, is all pepped up over the winter season, all on account of hockey. His love for the sport goes back to his boyhood days when he was considered one of Indiana's outstanding shinny players. They used tin cans instead of pucks in his league, and slight scars, one on his forehead and another on his knee, bear witness to Hoosier hockey technique.

• • •

"Woof," He Announced. "Bow-wow," They Reply

RADIO engineers long ago adopted the word "woof" as the best sound for testing microphones and broadcasting apparatus. But the word meant only an embarrassing situation for CBS announcer Bill Schudt when apparatus was being set up in a restaurant for an orchestra broadcast. At the request of an engineer, Bill stood in front of the orchestra and, oblivious of his surroundings, he emitted a long series of "woofs" into the microphone. Only after nearby wise-crackers countered with "bow-wows" did Bill become aware of the laughing throng of dancers who had collected near him.

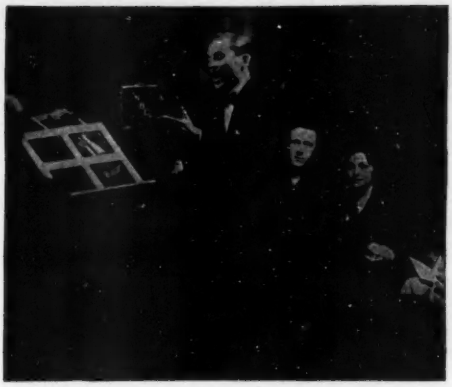
• • •

New Star Never Had Unlucky Day

BLUE-EYED Betty Barthell, songstress from the South, first smiled at life on a sunny 16th of April in Nashville, Tennessee. Fortune has smiled back ever since. Betty can't recall one unlucky day. One day she broke a mirror, entered

Remember Gracie Allen and the hunt for her lost brother? Here she is shown as she requested Mr. Sherman Burns of the William J. Burns Detective Agency to help her find her missing brother by pointing to a picture showing her brother (left) at the age of six months and (right) at the age of 18 years, somewhat smaller due to the depression.

Betty Barthell, young singer from the South, has enjoyed a rapid rise to some of the most popular programs over CBS stations.



Lanny Ross is shown here in the middle of his solo on Captain Henry's Show Boat, a broadcast which is featured over a coast to coast NBC network every Thursday evening.

an audition as singer number 13, and emerged as the vocalist heard twice weekly on the CBS network.

Less than a year after a Nashville radio manager heard Betty swing into lively lyrics over a grand piano, she was swept to stardom on the air.

Only by much coaxing was she first induced to appear in the radio studios, and before she realized it was anything more than a lark, she was signed to appear on leading programs.

Just one shadow—and it's not very dark—fell across her sunny way to fame. The Barthell family frowned on theatrical life. For six months they refused to buy a radio to hear "Dibbie" sing. But when she came home last Christmas with the world "in a jug," Mr. Barthell figured it was high time the family tuned in. Now it's a big night in Nashville whenever Betty sings.

• • •

Suggest Changes for Farm Leases

IF you're in the process of drafting a new farm lease this spring, it might be helpful to secure available information prepared by the U. S. Department of Agriculture and which has been released in the Department radio programs.

These directions for changes in agreements between farm landlords and tenants in order to bring the cost of producing farm products as low as possible may be secured from the Department at Washington, D. C. The changes have been advocated by bankers, farmers, and economic investigators in several states in order to put 1933 farm leases on a basis fair to both landlord and tenant.

• • •

Yes, Radio Stars Have Pet Aversions

PET aversions are universal. With radio stars they are no exception, a glance into their biographies reveals.

Take, for instance, Isabel Carothers, the Lu of Clara, Lu, and Em. She hates to go shopping. A peculiar aversion for a girl, especially when she admits she adores smart clothes, and that its only the shopping she dislikes.

Again, it's not easy to picture a famous actress who dislikes crowds. But crowds are actually the "pet peeve" of Bernardine Flynn, the star of more dramatic programs than you can count on your fingers. Miss Flynn also doesn't like people who talk so she can't understand them, and indirect lighting, but neither of these dislikes compares to her aversion of crowds.

Perhaps you will agree with Jane Froman who, more than anything else, hates the nudger in a theatre who jabs one's ribs at the critical moment. Helen King, the Emma of Clara, Lu and Em, gets all bothered about dresser drawers that refuse to open, while her partner Louise Starkey, known to you as Clara, would cheerfully annihilate the boisterous greeter who thumps one on the back by way of hello.

• • •

The Colonel Appears in Tall Hat

COLONEL STOOPNAGLE astonished a large audience at one of his recent broadcasts by appearing in an overpoweringly tall hat. Strong men cheered as the beetle-browed comedian frowned menacingly under his new skypiece. The graceful London topper belongs to announcer Louis Dean. For many years Colonel Stoopnagle refused to buy an opera hat—but overcome by the reception accorded him—the Colonel borrowed ten dollars from Budd and announced he would buy a hat for himself and a chauffeur's cap for Budd—if he could steal one small enough.

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MANY times you have thought of the great convenience and comfort of running water. But—have you considered today's low cost? Now you can have a thoroughly reliable water system—a genuine Myers—for as little as $65. Absolutely dependable quality.
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A Safe and Simpler Soil Sterilizer

By A. V. KREWATCH

Electrical Engineer, National Rural Electric Project

THE new method of sterilization suggested by the Puget Sound Power & Light Co. uses heat generated in the soil by current passing through it. Temperatures around 180° F. are effective in destroying various fungi, plant diseases, weed seeds, and soil-harbored insects.

A sterilizer using this method, designed and built by the National Rural Electric Project, is being operated by the Horticulture Department of the University of Maryland. Several types of soil have been sterilized successfully. Some difficulties have been experienced, however, especially with coarse, sandy loam, and sand.

The moist soil is shoveled into the box, the lid closed, and the power turned on. Six galvanized sheet iron plates spaced 6 in. apart, with adjacent plates connected to opposite sides of a 220 volt line, are used as electrodes. The soil, acting as a resistance in the circuit, is heated by the current as it passes from plate to plate. It usually takes 1½ to 2 hours to heat the soil to 180°—212° F. The power consumption varies between 25 and 30 kwh. per cubic yard.

To avoid all chance of touching the plates or even the soil while the current is turned on, a simple safety device is provided. A strip of wood attached to the left side of the lid directly in the path of an extension on the switch handle, keeps the switch open when the sterilizer is open. When the box is closed this arm extends over the lid, preventing it from being lifted while the voltage is on the plates.

The material for the 7.2 cu. ft. box cost $15.42. The box is built of 1-3/4 x 7-1/2 in. cypress plank, with inside dimensions of 2 ft. 6 in. x 2 ft. 4½ in. and 15 in. deep. The top and bottom are hinged to make loading and unloading easy.

In addition to work on the box type sterilizer, research is being continued on the application of this method to cutting benches and ground beds.

Electric soil sterilizer with top raised and bottom dropped for unloading. Note the safety arm which keeps the power off when the box is open.

Questions and Answers

Conducted by

H. J. GALLAGHER

Question: *I have an electric water system storage tank that is 5½" high, 18½" wide and 17½" long with ¾" discharge at lower part of one end. I want an automatic air unit to screw into this ¾" pipe hole and still leave a place on the unit to attach the ¾" house piping.*

I can buy a 21 gal. tank made for regular units for $25.00 but that would not supply as fresh water as having air unit to fit the regular tank.—E. W. S.

Answer: An automatic air unit should be installed in the suction chamber of the pump. It will not function when attached to the discharge pipe from the tank.

Small pressure tanks need no auxiliary device to insure fresh drinking water.

• • •

Question: *Would you kindly advise the writer as to what H. P., 110-220 volt, could be satisfactorily taken from a single phase extension line?*

Would it be possible to operate a 10 H. P. motor on a single phase line, 100 ampere service satisfactorily?

Would a 10 H. P. motor satisfactorily operate an ensilage cutter and feed grinder that is now operated by a 10-20 tractor? Is a 10 H. P. electric motor single phase, 110-220 volt, equivalent in power to a 20 H. P. gas engine?

Will you knidly answer these questions in the "Questions and Answers" columns.—R. R.

Answer: A 10 horsepower motor has generally been considered as a maximum size for single phase farm service. A motor of this size is practical only in exceptional cases. In general the 5 or 7½ horsepower motor meets all farm requirements for electric power.

A 220 volt, 10 horsepower motor may be operated on 100 ampere single phase service provided a relay starting switch is used instead of a direct line switch which would permit too great a flow of starting current.

A 10 horsepower motor will satisfactorily operate an ensilage cutter and feed grinder now operated by a 14-20 H. P. tractor, but the investment in the electric motor and wiring for these jobs could hardly be justified when a 5 horsepower motor will do the work equally good though not so fast.

A 10 horsepower electric motor has the same power rating as a 10 horsepower gas engine. The apparent difference between the two is the large momentary overload of the electric motor which is not characteristic of gas engines.

A 10 horsepower motor requires a 10 K. V. A. transformer which usually means additional operating costs. It is my belief that farm business will develop more rapidly and on a safe basis if emphasis is given to small motor operation. Power is merely the rate at which work is done, the same amount of work can be done with lesss power over longer periods of time and at considerably less investment in equipment. Time is not a major factor in electric operation.

What's New

Reviewed by T. E. HIENTON

Electric Dairy Utensil Sterilizer

Production of dairy products of high quality demands two things of the producer, proper cleanliness and proper cooling. Facilities for maintaining proper cleanliness include some methods of sterilizing or disinfecting the utensils used in handling these dairy products. Electrically heated dairy sterilizers have been used for some time, especially in California, but are now coming into general use throughout the United States.

Various models of an electric dairy utensil sterilizer, which is made in five sizes, 4, 8, 16, 25 and 36, are rated according to the capacity in quart cases of milk bottles which each will hold. Utensils are placed in this sterilizer, immediately after being washed and rinsed, held for a given length of time and then removed or allowed to remain in the sterilizer until needed. The sterilizer is constructed of heavily galvanized sheet iron, mounted on an angle iron frame, equipped with two inches of insulating material.

Electric Steam Generators

Equipment for generating steam is desirable on many farms and practically indispensable on some dairy farms and in cream receiving stations. Miniature steam generators, electrically heated, may be utilized for generating the steam required in installations of the above types.

A line of steam generators using 2, 3, 4, or 5 kilowatt heaters for generating respectively 6, 9, 12, 15 pounds of steam by weight per hour has been added to an already existing line of larger electric steam boilers by an eastern manufacturer. Standard equipment included in this generator are a welded seamless steel shell conforming to A. S. M. E. Miniature Boiler Construction Code, full-immersion heating unit, 3-heat control switch, heat insulation, water gauge, steam pressure gauge, A. S. M. E. safety valve, blow-down valve, steam supply valve, city-water filling valve and funnel for hand filling, condensate return connection for closed systems, and steam baffle.

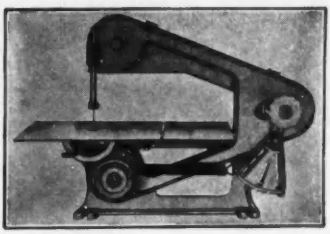
Electric Brooder

Raising chicks with electrically heated brooders has now become an established practice from coast to coast. Each year additional farmers or their wives decide to change to electric brooders and then learn for themselves the possibility of saving labor by their use.

A new electric brooder has appeared in the Middle West where brooders have been in use for several years. It is made in two sizes both conical in shape, one is 56 inches in diameter, the other 27 inches. A 1,000-watt heating element is used in the larger size and is located near the outer edge of the inner of two cone-shaped parts. An eye-bolt is attached to the apex of the cone for convenience in raising the brooder with sash cord and pulley for inspection of chicks and cleaning. The brooder is provided with a pilot light and is supported by three steel wire legs.

Band Saw for Workshop

Winter days on the farm provide more time for making repairs than any other period during the year. Days that might be spent in idleness are profitably used by many farmers in making handy devices for the farm household or repairs to machinery and buildings. Even now toys are made available for fun for the children.



Tools available for carrying on the types of work mentioned are becoming increasingly numerous. Two models of a new motor-driven band saw, recently announced by a manufacturer of woodworking machinery, will be of interest to boy or man on the farm who likes to make handy things of wood for the house or barn. This three-wheel band saw permits the use of very fine blades to band saw blades ¼-inch wide. A ¼-horsepower

(*Continued on page* 19)

Clipped Horses Do More Work

Clipped horses work better, look better, feel better; are fresher at night. Cleaned in half the time! One man does a quicker, easier, better job of clipping—with

ELECTRIC
STEWART Clipmaster

Clips Cows, Horses, Dogs, Mules

Plugs in any electric light socket using 110-120 volt current. It's the world's fastest, finest clipper. Quality throughout. Great reserve power. Easy grip and perfect balance any clipping position. 20 ft. rubber covered cord. Fully guaranteed by world's largest and oldest established makers of clipping and shearing machines. At any dealer—or send order direct; $2 down, balance C. O. D. When ordering, specify current. Other machines $11.75 up described in free catalog. Chicago Flexible Shaft Company, 5624 Roosevelt Rd., Chicago.

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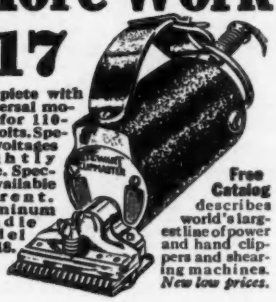
Complete with Universal motor for 110-120 volts. Special voltages slightly more. Specify available current. Aluminum handle model ...$18.



Free Catalog describes world's largest line of power and hand clippers and shearing machines. *New low prices.*

ELECTRICAL HOUSEKEEPING

Conducted by
GAIL MEREDITH

OMELETS

Turning the omelet out

IF we ate eggs by the calendar, I would say that this is preeminently the time of the year to practice up on omelets. If you do not make omelets, if you try to pretend to your family that eggs are laid only to be fried, steamed or poached on toast, your folks have never met the egg in its most famous role.

Sixty years ago exactly, Madame Poulard, a Frenchwoman living in Mont Saint Michel, went into her kitchen one night thinking distractedly,

"What can I have for supper? What *can* I have? Nothing but eggs, eggs, eggs. I have given Monsieurs eggs till they vow they will shortly cackle."

Then she stood and drummed on the table for a time, considering the state of her larder. The boy brought in a pail of milk, warm, and foamy, fresh from the cow.

"Well," she decided with a sigh, "it must be eggs again, but let us make it eggs with a difference."

First she put a generous lump of the butter she had churned that morning into her shallow copper skillet. She broke six eggs in, one by one, and added for each egg, a measured spoon of the milk in the pail on the corner of the table. She cooked this mixture slowly, and turned it deftly before she served it brown and fragrant to her hungry guests.

The Birth of the Omelet

At least it may well have happened that way. You understand, I was not there, and the only record we have is that back in 1873, Madame Poulard did invent the omelet. And a good job it was, too. In fact, her compatriots are so proud of her and her famous omelet that they are planning to set up a monument to the omelet right there in Mont Saint Michel where it was invented.

Omelets require a deft touch and a fine sprinkling of that culinary genius we used to say lay in the hands of a born cook, before we learned better. The deft touch you can acquire, and the genius of cooking, like other genius-ing we have read about, lies in taking infinite pains.

The Bureau of Home Economics of the United States Department of Agriculture has worked out complete directions for the perfect omelet.

Cook Slowly at Moderate Heat

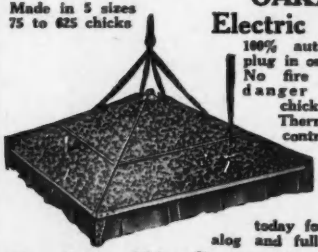
"The secret of making a good omelet of any kind is the same secret that applies to all successful cooking of eggs and dishes in which eggs predominate: cook slowly at moderate, even heat," they say. "The basic ingredients for any kind of omelet are the same: one egg for each person, one tablespoon of milk for each egg, and salt to taste. Beat the egg yolks and whites separately for a fluffy omelet; beat them together for a flat omelet.

"To make a fluffy omelet take the required number of eggs, and add as many tablespoons of milk as you have eggs. If preferred the milk may be heated: it will cook the yolks slightly when it is added hot and give the mixture a smoother

No ashes, No fumes, No trouble

OAKES
Electric Brooder

Made in 5 sizes
75 to 625 chicks



100% automatic. Just plug in on light socket. No fire hazard. No danger of gassing chicks. Automatic Thermostatic Heat control maintains even heat always. Heating element guaranteed 2 years. Write today for FREE catalog and full information.

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PAUL WATER SYSTEM

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consistency. Or one cup of hot white sauce of medium thickness added to four eggs will make a larger omelet with more body. Fold the yolk mixture gradually and carefully into the stiffly beaten whites containing the salt—one fourth teaspoon of salt for each four eggs. Have ready and hot a smooth, heavy pan containing one tablespoon of butter and pour the mixture into the pan.

"The omelet can be cooked in three different ways, but in any case start it on top of the stove at moderate heat. As soon as the omelet has browned slightly on the bottom, place it in a moderate oven, 350 degrees, and bake for ten minutes. Or, continue cooking on top of the stove until the mixture sets, and then place under the broiler for two or three minutes. Or, if you prefer, you can cover the pan during the whole period and so cook the top of the omelet with steam. When the omelet is done, crease it through the center, fold it over with a spatula, and roll it into a hot platter without attempting to lift it from the pan. Pour over the omelet melted butter containing finely cut parsley and serve at once.

"For a flat omelet, beat the eggs with one tablespoon of milk for each egg, and salt to taste. Pour a thin layer of the mixture into a hot buttered pan and cook slowly and evenly. When brown on the bottom, roll the omelet in the pan and turn it out onto a hot platter.

Chopped Ingredients Dress Up the Plain Omelet

"Omelets with different names are simply variations of plain omelets, made by adding chopped ingredients to the egg mixture before it is cooked or spread over half of the cooked omelet before it is folded and turned onto the platter. Chopped fried ham or bacon, grated cheese, or a cooked vegetable such as peas, or a combination of chopped onion, green pepper, celery and parsley fried delicately in butter, are some suggestions for varying a plain omelet. Sweet omelets spread with jelly and containing sugar in the egg mixture are sometimes served for dessert."

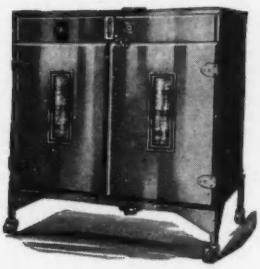
What's New

(*Continued from page* 17)

motor operates the saw by means of a "floating drive." A steel table 12 inches square may be tilted to a 45° angle, the exact angle being shown on a graduated degree plate, visible from the front of the machine.

Electric Incubator

Electric heat surpasses any other type of heat for incubators. During the past few years, a decided change to electric heat has been made by several incubator manufacturers, which will in itself substantiate the above statement. However, certain features of electric heat, such as cleanliness, low fire hazard, even temperature regulation, and low labor cost are all important whether in a 50- or a 40,000 egg machine.

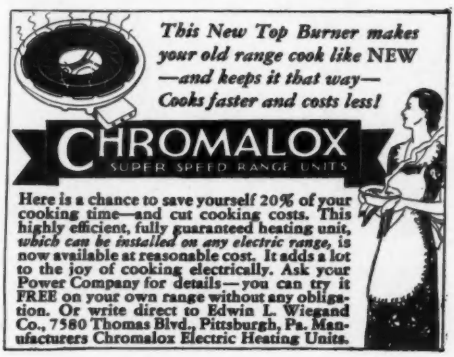


A 1200-egg electric incubator has recently been added to the line of electric poultry equipment manufactured and sold by a well known middle-western firm. The machine occupies a floor space 30 by 50 inches and has two rows of trays each of which is accessible from the front of the machine. An egg-turning device is provided for each of the 12 trays. The incubator is of all-metal construction, mounted on casters, and may be operated from an ordinary 110-volt light socket.

Electric Soil Sterilizer

Gardeners and florists, who use soil several times, often find that it is necessary to sterilize it to prevent losses from diseases and insect pests which may accumulate in it. In old-time practice, soil was changed frequently but with increasing difficulty and higher cost for securing new soil in congested areas, it has been found easier to sterilize soil and use it over and over again.

An eastern manufacturer working in cooperation with an eastern utility company has developed an electric soil sterilizer. This sterilizer consists of a one-yard cubical box of ⅛-inch boiler plate mounted two feet from the floor on angle iron legs. Covers are provided for top and bottom, while the sides and top are insulated with Balsam wool. Heat is furnished by electric heating elements formed by placing nichrome wire in porcelain insulators inside of galvanized iron pipe.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Here is a chance to save yourself 20% of your cooking time—and cut cooking costs. This highly efficient, fully guaranteed heating unit, which can be installed on any electric range, is now available at reasonable cost. It adds a lot to the joy of cooking electrically. Ask your Power Company for details—you can try it FREE on your own range without any obligation. Or write direct to Edwin L. Wiegand Co., 7580 Thomas Blvd., Pittsburgh, Pa. Manufacturers Chromalox Electric Heating Units.

NEW WAY TO CHURN
Thousands are changing to this simple, convenient, modern way to churn. It's the famous DAZEY principle adapted to electrical operation. Ends the drudgery. Just turn the switch. Made in 2, 4, 6 and 10 gallon sizes.
Write today for catalog and further information.
DAZEY CHURN AND MFG. CO., Dept. 27
Warne and Carter Avenues
ST. LOUIS, MO.

SMALL MIXERS

SMALL mixing machines take over so many of the fussy jobs claiming our time and strength in the kitchen that it is small wonder they are so popular.

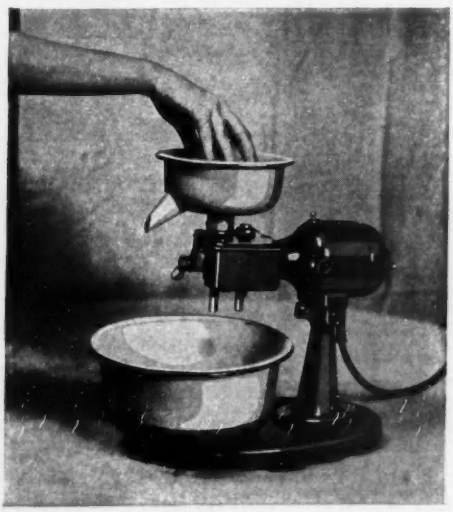
There is a new one on the market this winter in the group that sells for under thirty dollars. Mechanically this mixer differs from its predecessors in the contrivance that limits the motor to different speeds. Its manufacturers claim that this construction ensures full power to the motor even when driven at slow speeds on heavy jobs.

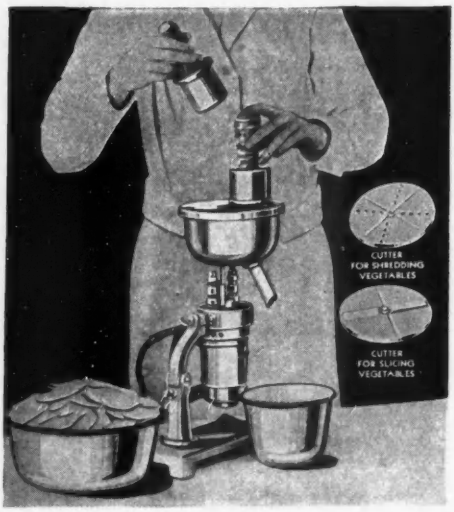
This machine is unique among the small mixers in having two sets of beaters. Several of them have had extra paddles for mixing malted milk or other drinks, but this one has different tools for different mixing jobs. For light work, eggs, cream, drinks, mayonnaise, there is a specially designed whip that starts out like a Dover egg beater and ends up with slender wires that attach the blades to the center post of the beater. This whip is said to give plenty of agitation with the least possible amount of splashing. The other, a flat beater, is made for heavier work like creaming butter and sugar, mixing batter for cakes, and mashing potatoes.

The machines that have been on the market for several years show two distinct changes this season. They have become portable, and they are taking on extra attachments that formerly went only with the larger and more expensive machines.

Making them portable has evidently been done at the insistence of the women who use them. No sooner did we get a good, sturdy machine set up so it would mix and beat without attention, leaving our hands free to sift flour and pour in milk, than we suddenly began to demand the beater at the stove, too, for seven minute icing and mashing potatoes.

And since the manufacturers are in business to make us the things we want, they have changed





SHOW CHANGES

these beaters so we can take them off their standard and use them where we like. All we have to do is press a little lever or loosen a thumb screw, then we can lift the motor and beater off the supporting arm of the standard. It snaps back easily on one and a turn of the screw holds it in place on others.

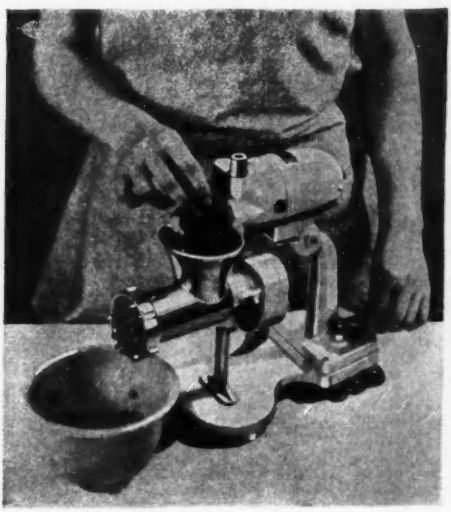
The handle we carry it by has had considerable attention. The picture of the beater off its standard shows a handle with excellent design. It is built to fit the hand comfortably.

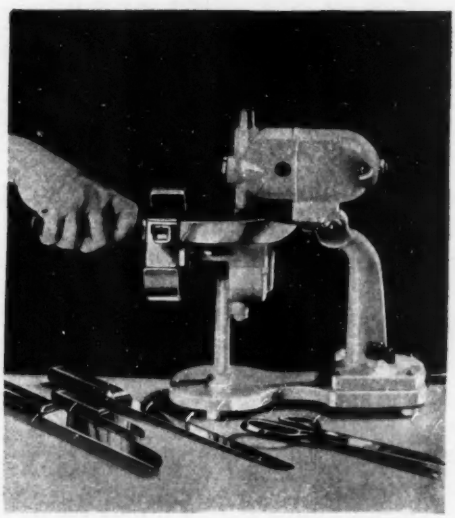
Most of the small mixers have had a fruit juicer that fits onto some shaft in the motor housing. In one of them the food chopper is made by fitting plates that shred or grate vegetables into the bowl of the fruit juicer. A cover with a round hopper on top fits over the bowl. There is a wooden plunger to shove the vegetables through this hopper onto the rapidly turning cutter plates. When the vegetables are sliced, we lift the cover and the cutter and pour them out of the bowl.

In two of the other machines there is an auxiliary power unit that fits onto the mixer and in turn takes various attachments. The food chopper for one of these machines has different knives to grind meat and chop vegetables. The other one has a similar grinder and a second attachment with plates that slice or shred.

Nor is that all. There is a buffer for polishing silver, and a grinder for sharpening knives. There is a can opener that cuts the top of any round can neatly and expertly, all the while holding the can firmly in place until we are ready to take it away. There is a coffee grinder, too, that will grind the coffee fresh for breakfast, coarse, or fine, or pulverized as our family demands.

On the whole, it would seem that mixing machines were just hustling around trying to be useful like the rest of us who work for a living.





Are You Informed?

The need for efficient and economic farm operation has never been greater. Do you know exactly how much electricity can help you?

Here is a list of tried and proven equipment and names of manufacturers who can help you.

Get acquainted at once with these manufacturers by writing for free literature which they offer.

Electric Ranges	Page
Edison G-E Appliance Co.	*Inside Front Cover*
Malleable Iron Range Co.	—
Refrigerators	
Frigidaire Corp.	3
General Electric Co.	4
Water Systems	
Myers & Bro., F. E.	15
Fort Wayne Engineering & Mfg. Co.	18
Water Heaters	
Edison G-E Appliance Co.	*Inside Front Cover*
Esco Cabinet Co.	13
Malleable Iron Range Co.	—
Wiegand Co., Edwin L.	19
Dairy Utensil Sterilizers	
Esco Cabinet Co.	13
Milk Cooling Equipment	
Esco Cabinet Co.	13
Frigidaire Corp.	3
General Electric Co.	4
Farm Motors	
General Electric Co.	4
Stationary Spray Pumps	
Myers & Bro. Co., F. E.	15
Electric Poultry Supplies	
Lyon Electric Co.	22
Oakes Mfg. Co.	18
Time Switches	
Lyon Electric Co.	22
Oakes Mfg. Co.	18
Paragon Electric Co.	22
Clipping Machines	
Chicago Flexible Shaft Co.	17
Range Replacement Units	
Edison G-E Appliance Co.	*Inside Front Cover*
Malleable Iron Range Co.	—
Wiegand Co., Edwin L.	19
Churns	
Dazey Churn Mfg. Co.	19

For information about devices not included in the above list—use this handy coupon.

TEAR OFF HERE

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

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My name is.....

Address .....

..... 3-33

Under The CHESTNUT TREE

When Plans Go Amiss

Grover Whalen, former official "greeter" of New York, was talking to a reporter about Russia.

"Russia thinks she is going to lead the world," he said. "Well, Russia in the end will fare like the man in the anecdote.

"'My wife,' the man said, 'told me to lead the old cat off somewhere and lose it. So I put the cat in a basket and tramped into the country about eight miles.'

"'Well,' said another man, 'did you lose the cat?'

"'Lose it? said the first man. 'If I hadn't followed it I'd never have found my way back home.'"

Why, of Course

Jake: "What is it that you part your hair with, ride all over town in and feed the baby with?"

Legg: "I can't imagine."

Jake: "A comb, an automobile and a bottle."

That English Tea!

He had made several vain attempts to swallow the mixture. But, somehow or other, he could not get it down. When at last he did manage to catch the waitress's eye, he called her, and said: "There's something funny about this coffee. It tastes like cocoa."

The waitress sipped it, made a wry face and sipped it again, to make sure. "I'm sorry," she said. "I've given you tea."—London Tit-Bits.

A Minor Error

A well-known bishop set out one night to attend a party given "by children for children."

"Don't announce me," he said to the servant.

Leaving his coat and hat downstairs he quietly opened the drawing-room door, where the buzz of voices announced the presence of company. Dropping on his hands and knees, he entered, making strange noises distinctly resembling the neighing of a horse.

Aware of a dead silence, he looked up, and found the guests assembled for an eight o'clock dinner regarding him with expressions not unmixed with fear.

The party was next door.

"You boys of today want too much money. Do you know what I was getting when I married your aunt?"

"No, and I'll bet you didn't either."

No Improvement

A woebegone-looking traveler reached the river-side and approached the old boatman who operated the ferry across the stream.

"Dad," he whined, "I'm broke, and I must get across the stream. Will you trust me for it?"

"Fare's only a nickel, mister," said the ferryman.

"I know it, but I haven't got a nickel," replied the traveler.

The old man took a puff at his pipe.

"Mister," he said, "if you ain't got a nickel you won't be none the better off on the other side of the river than you are on this."

CLASSIFIED ADVERTISING

FREE BULLETIN on Electric Poultry Equipment describing Burglar Alarms, Brooders, Incubators, Heating and Thermostatic Supplies for home made equipment. Have proved they will work in your climate. Write for your copy today. LYON ELECTRIC COMPANY, 2075 Moore St., San Diego, Calif.

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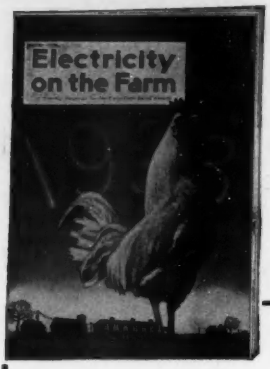

WINNERS
of January FRONT COVER TITLE CONTEST

1st Prize-$25.00

"Electricity challenges the dawn of the coming year."

MRS. T. H. HINKEL,
R. 2, Middlefield, Ohio

The following have been awarded $5.00 cash prizes:

"He crows both night and day, Because he was raised the electric way."

D. B. GONZALEZ,
P. O. Box 1220, Pensacola, Fla.

"Lengthened daylight means increased profits."

LESTER L. PETERSEN,
R. F. D. 1, Andover, Iowa.

"The modern rooster crows the same old way, The modern hen lays night and day."

L. S. McNEFF,
R. F. D. 2, Plainfield, Ind.

"Egg production is multiplied, when the hen is electrified."

SADIE E. BRANCH,
R. F. D. 1, Smithfield, Va.

"Electricity turning night into day makes the egg business pay."

HARMON J. NECKERS, R. 3, Clymer, N. Y.

Below is an additional winner of a $5.00 cash prize for the November 1932 cover, inadvertently omitted from the January issue:

"From the open range to the electric range."

MRS. JANE N. LUND, Cambridge, Ill.

RULES FOR MARCH CONTEST

There will be one first prize of $25.00 and five second prizes of $5.00 each. In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Titles should not be longer than 15 words—the shorter the better—and they need not be rhymes.

Question "A" must be answered correctly.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 No. Michigan Ave., Chicago, Ill., before April 1st.

Winning names and titles will be announced in the May issue.

Follow these simple rules. Your Editor cannot answer letters about the contest.

My title for the March Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(a) How is the water pumped on your Farm?

- ☐ Hand Pumps
- ☐ Wind Mill
- ☐ Gas Engine Pump Jack
- ☐ Electric Motor Pump Jack
- ☐ Automatic Electric System (Shallow Well)
- ☐ Automatic Electric System (Deep Well)
- ☐ City Water
- ☐ Gravity

My name is..... R. F. D.....

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WINDMILLS CAN PUMP WATER

...But They Cannot Toast Bread

(By C. M. Ripley, General Electric Co.)

Hundreds of thousands of farmers are now buying electricity cheaper than they can make power in their own windmills.

A windmill can pump water, but it can't toast bread. Kerosene can make light and heat but it can't run a radio. A truck can carry a heavy load, but it can't cook or heat water. A horse can pull a plow, but it can't sweep your floor, or make ice, or cool milk, or make ultra-violet rays.

But electricity does all these things and many, many more. It is the many-handed servant of us all. And, according to the Government Report, it costs about a quarter as much as the average power now used on the farm.

Of course, all the power which the farmers now use could not be electrified with present-day apparatus. For example, there is no electric plow. But this same Department of Agriculture Report states that 30% of the energy used on American farms could be electric energy, with advantage to the farmer.

In the past two years almost one hundred thousand farms have been connected to the power lines of electric light companies. This is nearly as many farms as the total that were connected up to ten years ago.

The Dayton Power & Light Co.

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